ed For Release 2001/08/27 : CIA-RDP79-00798A000400100

Washington, D.C. 20520

BUREAU OF INTERNATIONAL SCIENTIFIC AND TECHNOLOGICAL AFFAIRS

U.S.-U.S.S.R. Programs Secretariat

STATINTL

STATINTL

April 29, 1974

NOTE FOR: CIA -

SUBJECT: Briefing 9:39 a.m., May 2, 1974

Following is a list of NSF personnel who have been invited by the U.S. Working Group Chairman on Microbiology to the briefing at 9:30 a.m., May 2, Room 924 of the Foundation, 1800 G Street, N.W.

Dr. Joshua Leise (U.S. W.G.C.)
Office of the Deputy Assistant
Director for Research

Dr. Eloise V. Clark
Head of the Molecular Biology Section

Dr. Edward C. Creutz
Assistant Director for Research

Dr. Jerome Fregeau
Executive Assistant to the Deputy Assistant
Director for Research

Dr. Marshall M. Lih Division of Engineering

Dr. John Mehl
Deputy Division Director
Division of Biological and Medical Sciences

Dr. Richard Ries Office of International Programs

Dr. John Thomas
Office of International Programs

Dr. Edward Todd Deputy Assistant Director for Research In the

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Dr. George Tsao Program Manager for Advanced Technology Applications

Dr. Israel Warshaw Deputy Division Director Division of Engineering

I have been informed by Dr. Leise's secretary that all the above have security clearance through Secret.

In addition to the above, Dr. Arthur Humphrey of the College of Engineering, University of Pennsylvania, and Co-Chairman of the U.S. Group, will also attend the briefing. Dr. Humphrey has received, for the day of the briefing, a Secret security clearance from the Department of State.

It is also possible that one or more of the following from this office may attend the briefing: Dr. Oswald H. Ganley, Dr. Royal Wald, All have appropriate security clearance.

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Adah Sheldon

11 April 79

NUMBER OF	AND TECHNICAL IN THE FIELD OMEANS"FOR THE	IN FULFILLMENT
DATE	COOPERATION BETWI DF "PRODUCTION OF PERIOD JANUARY 1,	C OF THE WORKING I
PERTOD RESPONST	AND TECHNICAL COOPERATION BETWEEN THE U.S.A. AND U.S.S.I IN THE FIELD OF "PRODUCTION OF SUBSTANCES BY MICROBIAL MEANS"FOR THE PERIOD JANUARY 1, 1974 TO DECEMBER 31, 197	IN FULFILLMENT OF THE WORKING PROGRAM FOR SCIENTIFIC
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Joint Book Writing	Exchange Visits on Computer Control	Conference on Mechanism of HC uptake by Microbes	Conference on Instrumentation	3rd Meeting Working Group	VENT EVENT
ν	ы	и	, M	10	NUMBER OF PARTICIPANTS USSR USA
் ග	20	S	ហ	10	OF L'PANTS USA
1974	1974-75	Fall 1974	Aug.1974	June 10 to June 20	DATE OF ACTION
Phila., USA in con- nection with event 2	Kazan MIT J. of P. Widener College	Moscow, USSR	Phila., USA	Wash.,D.C.	PLACE
weeks	faculty F for 3 months 2 post-doctorals for 1 year	2 weeks	weeks	2 weeks	PERIOD OF ACTION
Main Board	Main y Board - - als year	Main Board & Inst. Prot. Synth.	Main Board G Kazan Inst.	Main Board	RESPONSIBLE ORGANIZATIONS USSR USA
NSF	NSF	NSF 6 Kansas State Univ.	NSF & P.	NSF 6 Dept.of State	USA USA
Project 2 Task 6.1	Project 78k 4.1 least 4.1 proved For Release	Project Task 2.1	Project Task 1.1	Recommenda 740	REFERENCE BASIS 40011
Жр	proved For Release	2001/08/27 [©] C	ે. \ે :IA-RDP79-0679	98400040	0100011-1

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	Research Project Development of Systems for Com- puter Control of Ferm. Systems	Research Project on Theory of HC Uptake by Microbes	Research Project on Ferm.Dis- persion	Research Project on Fermentation Inst.	NT EVENT NAME	
	10	10	, 4	; ;	NUMBER OF PARTICIPANTS USSR USA	IN FULFILLMENT AND TECHNICAL IN THE FIELD OF MEANS FOR THE
	&	4	1	4	OF PANTS USA	FULFILLMENT TECHNICAL C THE FIELD OF
	begin July 1, 1974	begin July 1, 1974	begin I July 1,1974	begin U. July 1,1974	DATE OF PI	ULFILLMENT OF THE WORKING TECHNICAL COOPERATION BETTHE FIELD OF "PRODUCTION OUS"FOR THE PERIOD JANUARY
	Kazan Inst. 3 Chem.Tech. ye Univ. of Penna. Mass.Inst.Tech.	Inst. Prot. Synth. & Kansas State Univ.	Kazan Inst. 3 of Chem. years Tech.	of P. 3 years	PLACE PERIOD ACTION	PROGRAM FOWEEN THE U.F SUBSTANCE
	years nna.	3 years				S.A. AND U.S.S.A MICROBI
	Main Board	Main Board	Main Board	Main Board	RESPONSIBLE ORGANIZATIONS USSR USA	IFIC U.S. ROBIA
3	NSF	NSF	NSF	NSF	IBLE ATIONS USA	S.R. L 1974.
Approved Fo	Project Office Projec	Project RI Tasks 2 GA 2.3, Tasks 3.2 3.2	Project Task 1.00798	Project 00 Task 1.3	REFERENCE BASISO	
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IN THE FULFILLMENT OF THE WORKING PROGRAM FOR SCIENTIFIC AND TECHNICAL COOPERATION BETWEEN THE U.S.A. AND U.S.S.R. IN THE FIELD OF "PRODUCTION OF SUBSTANCES BY MICROBIAL MEANS" FOR THE PERIOD JANUARY 1, 1974 TO SECEMBER 31, 1974.

P1	18	17	16	15		14	[‡] 5 RDP79-00	부	10	EVE NO.
	,	Approved	l For Rel	ease 2	001/08	3/27 : CIA-	RDP79-00	798A0004	.0010001	1-1읍
Meeting, ex- 4-6 change of cultures, & field trips	Exchange of l Junior Scientists	Research Program	Working 4 Conference	tory		Fermentable sugars 6 Cleavage reversal	Production of s	Enzyme systems	Polimery-74 Conference	EVENT
ures,	1-7	•~	4-7	4-7		- Ծ	sugar 6	for a	6	NUMBER OF PARTICIPA USSR
4-6	4-7	• >	4-7	4-7 ,	4	rom agric	from cell ulos e 6	acoustic imaging 4	6	NUMBER OF . PARTICIPANTS USSR USA
Dec. 1974	Begin Sept. 1974	Begin Sept. 1974	July 1974	June 1974	1,	solid wast July 1, 1974	se July 1, 1974	ing and holography July 1, 1974	Sept. 3-16 1974	DATE OF ACTION
Wash.,D.C.	Various Sites	Various Sites	Beltsville, Md	Various Sites	Inst. Biosyn. Protein Sub.	Tnst. Biosyn Protein Sub.	Inst. Biosyn. Protein Sub.	U. Pa. Moscow U.	Moscow	PLACE
2 wks.	1 yr.	2 yrs.	3-5 days	3 wks.	Corning Glass	Iowa State Univ.	U. Cal. Berkeley	5 yrs.	2 wks.	PERIOD OF ACTION
Main Board	Main Board	Main . Board .	Main Board .	Main Board	Main Board	e Main Board	Main Board	Main Board	Main Board	RESPONSIBLE ORGANIZATIONS USSR USA
NSF	NSF	NSF	HSN.	NSF	NSF	NSF	NSF	NSF	NSF	USA
NSF Froject 5	Project	Project	NSF Project	Project 5	Project 4,	Project 4,	Project 4,	Project 4,	Project 4	REFERENCE BASIS
	5	5			001 <u>¥</u> 08	.;` B/27 ≌CIA-	.RDP ₹ 9-00	798 A 0004	.001 © 001 ©	ſ
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NUMBER OF	IN FULFILLMENT OF THE WORKING PROGRAM FOR SCIENTIFIC AND TECHNICAL COOPERATION BETWEEN THE U.S.A. AND U.S.S.R. IN THE FIELD OF "PRODUCTION OF SUBSTANCES BY MICROBIAL MEANS"FOR THE PERIOD JANUARY 1, 1974 TO DECEMBER 31, 1974
DATE	OF THE WOR OOPERATION "PRODUCTI ERIOD JANU
a a	KING PROGRAI BETWEEN TH ON OF SUBSTI ARY 1, 1974
PERIOD	M FOR SCII E U.S.A. / ANCES BY N TO DECEM
RESPONSIBLE	ENTIFIC AND U.S.S.R. GICROBIAL BER 31, 1974.
o er en euce	

28	27	26	25	24	23	22	21	20	IS E
Biological Value and Toxicity	Research & Development on Industrial Methods of Biomass Production	Research & Development on Protein Isolation	Research & Development of Biomass Production	Research on Protein Isolation & Release	Research on Cultivation of Yeast and Bacteria on Various Substrates	Choice & Selection of Microorganisms	Conference Work- Shop on SCP Research	Exchange of Publications	EVENT EVENT
	!	I ,	1		ı	6	. 6	-	NUMB PART USSR
2	4	4	4	4	6	10	20		NUMBER OF PARTICIPANTS USSR USA
ម ង	4 #	•	Ju.	Begin July	Begin July	Sept.	Sept.	Jul	USA
Begin July 1, 1974	Begin July 1, 1974	Begin July l, 1974	Begin July 1, 1974	gin ly 1, 1974	Begin July 1, 1974	t. 1974	t. 1974	July 1, 1974	DATE OF ACTION
M.I.T.	м. г. т.	ж.н. н.	M.I.T., U.P U. Missouri	M.I.T.	M.I.T., U. U. Missouri	USA & USSR	Cambridge, Mass. USA	Cambridge & U.S.S.R.	PLACE
3 Years	2 Years	2 Years	U.Pa., 2 Years uri	2 Years	Pa., 2 Years	1 Day	3 Days	Continuing	PERIOD OF ACTION
= .	=			- : : : : : : : : : : : : : : : : : : :		=	=		RESI ORGA USSI
NSP	NSF	NSF	NSF	NSF	NSF	NSF & MIT	NSF & MIT	NSF & MIT	RESPONSIBLE ORGANIZATIONS USA USA
Project 1 Task 8	Project 1 Task 6.1, 6.2, 6.	Project 1 Task 5.1 & 5.2	Project 1 Task 4.2, 4.2, 4.3	Project 1 Task 5.1 & 5.2	Project 1 Task 4.1 & 4.2	Project 1 Task 3	Project l Task 2A	Project l • Task 1	REFERENCE BASIS
	6.3	5.2	ِدِّ elease 200	5.2	: CIA-RI	⊃P79-0	0798A00	• 040010	

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PLAN OF ACTION

MEANS"FOR THE PERIOD JAN	IN THE FIELD OF "PRODUCTION OF S	AND TECHNICAL COOPERATION	IN FULFILLMENT OF THE WO
MEANS"FOR THE PERIOD JANUARY 1, 1974 TO DECEMBER 31, 1974.	CION OF SUBSTANCES BY MICROBIAL	AND TECHNICAL COOPERATION BETWEEN THE U.S.A. AND U.S.S.R.	IN FULFILLMENT OF THE WORKING PROGRAM FOR SCIENTIFIC

<u>4</u> .	(A p)	oroved	For Relea	se 2004/08	/27 : CIANRE	DP79-007	98A 000 E00100	011-1
Research projects on genetics of non-anti-biotic producing cultures	Annual Conference on research projects (1.3, 1.5)	Research projects on cellulose utilization	Research Projects on genetics of antibiotic producing cultures	Conference on genetics antibiotic producing cultures	Conference on genetics non antibiotic producting cultures		EVENT	Mi
ω	ᅜ	N	3 institu- tions	6	પ ાં		NUMBER OF PAKTICIPANTS USSR USA	IN THE FIELD OF "PROPMEANS"FOR THE PERIOD
w	<u>ب</u>	Ю	3 insti- tutions	6	Vi		ANTS	THE I
1975	Annual	1975	1975 ^{ons}	Spring 1975	Spring 1975		DATE OF ACTION	OF "PRODUCTION OF E PERIOD JANUARY 1,
to be deter-	Alternating US and USSR	US and USSR	US and USSR	Leningrad	Chicago or Seattle		PLACE	SUBST.
years	3 days	2 years	3 years	3 days	2 days		PERIOD OF ACTION	ANCES BY MICROBIAL TO DECEMBER 31, 1974.
Main Board	Main Board	Main Board	Main Board	Main Board	Main Board		RESPONSIBLE ORGANIZATIO USSR USA	MICROBIA BER 31,
NSF	NSF	NSF & Natick Lab.	NSF	NSF	NSF		RESPONSIBLE ORGANIZATIONS USSR USA	L 1974.
Project 3 Task 1.5	Project & Tasks 1.3	Project d Task 1.4 proved	Project de Task 1.3Relea	Project Task 1.200#08	Project Task 1.0CIA-RD)P79-007	REFERE BASI 60400100	011-1

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PLAN OF ACTION

41.	Approve	ed For R	elease 20	001/08/27	CIA-RDP	79-0079	3A00040010 • VENT	00011-1
Research project on B. thuringlensis and B. popilliae	Research projects on genetics of insect pathogens	Conference on gene- E tics of insect patho gens	Workshop on insect	Research projects in genetic engineering and molecular biology	Conference on genetic engineer-ing	Exchange of personnel in genetic research projects	EVENT	
18. T	ж 3	10 ° 00	\sqrt{1}	in 3 Ig Logy	V		NUMBER OF PARTICIPANTS USSR USA	IN THE FIELD MEANS"FOR THI
H	ω	\cdot	20	ω	Vi	6/	ANTS USA	THE CELL O
Spring 1975	Spring 1976	Spring 1975	Oct. 1974	Spring 1976	Spring 1975	1 from each country for 12 months	DATE OF ACTION	IN THE FIELD OF "PRODUCTION OF SUBSTANCES BY MICROBIAL MEANS"FOR THE PERIOD JANUARY 1, 1974 TO DECEMBER 31, 1974.
Manhatan, Kans, & Armenia	US & USSR	Armenia	East Lansing Mich.	US & USSR	Stanford	US & USSR	PLACE	ON OF SUBSTARY 1, 1974
1 year	3 years	3 days	g, 3 days	3 years	4 days	3 years	PERIOD OF ACTION	AE U.S.A. CANCES BY TO DECEM
Main Board	Main Board	Main Board	Main Board	Main Board	Main Board	Main Board	RESPONSIBLE ORGANIZATIO USSR USA	AND U.S. MICROBIA BER 31,
NSF	NSF	NSF	NSF	NSF	NSF	NSF	RESPONSIBLE ORGANIZATIONS USSR USA	S.R. AL 1974.
Project 3 Task 2,4	Project 3prove	Project 30 Ro	Project ase 20	Project Task 1.701/98/27	Project RDP Task 1.60	Project. 79-09-79	REF ER 004001	00011-1

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IN'FULFILLMENT OF THE WORKING PROGRAM FOR SCIENTIFIC AND TECHNICAL COOPERATION BETWEEN THE U.S.A. AND U.S.S.R. IN THE FIELD OF "PRODUCTION OF SUBSTANCES BY MICROBIAL MEANS"FOR THE PERIOD JANUARY 1, 1974 TO DECEMBER 31, 1974.
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OF THE COOPERATE PRODICE OF THE PROD
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49	5 5	Approve	ed For R	ease 20¢	∏/08/2 <u>₹</u>	CIA-ROE	79-0079 <u></u>	A0004601	00011-1
o'00 k	דינט נ	1 HO				•		IN	
Research projects on genetic analysis in bacillus	Research projects on amino acid production	Conference on research projects	Exchange of personnel in yeast genetics programs	Research project on genetic analysis		Conference on mutagenesis and recombination	search projects (2.3)		₩ ₩
N	N)	.	ω	W	Н	10	+	NEER REFICE	IN THE FIELD MEANS"FOR THE
'n	Н	ω	ω	W	Н	vi	‡	OF PANTS USA	R THE
Fall 1974	Fall 1974	Annual	l from each country for 12 months	Fall 1974 & Spring 1975	Spring 1975	Spring 1975	Spring 1977 1978	DATE OF ACTION	ELD OF "PRODUCTION OF SUITHE PERIOD JANUARY 1, 19
Waltham, Mass. 3 Rochester, NY Moscow & Armenia	Chicago & Armenia	Alternating US & USSR	US & USSR	Waltham, Mass Leningrad & Moscow	Berkeley & Leningrad	Leningrad	US & USSR	PLACE	ON OF SUBS
3 years nia	3 years	3 days	3 years	s. 3 years	3 years	4 days	2 days	PERIOD OF ACTION	SUBSTANCES BY MICROBIAL 1974 TO DECEMBER 31, 1974.
Main Board	Main Board	Main Board	Main Boa rd	Main Board	Main Board	Main Board	Main Board	RESPONSIBLE ORGANIZATIO USSR USA	IND U.S TICROBIA ER 31,
NSF	NSF	NSF	NSF	NSF	NSF	NSF	NSF	RESPONSIBLE ORGANIZATIONS USSR USA	S.R. AL 1974.
Project 3 Task 4.2	Project 3 Task 4.1	Project 3 prove	Project 3 Rel Task 3.2 & 5	Project 3 Task 3.3 ease 200	Project 3 1/08/27	Project 3 PP	Project 3 Task 2.3	REFERE EQUATION 154	00011-1
ect 3	ω	င္ဖ္က်ီယ	ed For Re	ω	ω	ject 3 k 3.1 CIA-RDP	k 2.3 79-0079	REFERE E 004001	<i>.</i>

in book

PLAN OF ACTION

AND TECHNICAL COOPERATION BETWEEN THE U.S.A. AND U.S.S IN THE FIELD OF "PRODUCTION OF SUBSTANCES BY MICROBIAL MEANS FOR THE PERIOD JANUARY 1, IN FULFILLMENT OF THE WORKING PROGRAM FOR SCIENTIFIC 1974 TO DECEMBER 31, 1974. AND U.S.S.R.

Conference on research projects (4.1 & 4.2) methods to be published Symposium on genetic personnel 20 USSR PARTICIPANTS NUMBER OF W 20 USA w 1979 Annual 12 months country for from each ACTION DATE OF Alternating US or USSR US & USSR PLACE US & USSR 1 week 3 days 3 years ACTION PERIOD ORGANIZATIONS
USSR USA Board Main Board RESPONSIBLE Main Board Main RSF NSF NSF REFERENCE BASIAGO A 1 Project 3 Project 3 Project 3 CH.2 Task 4.3 Project 3 (summary

Exchange of (4.1 & 4.2)

EVENT

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PROJECT NO

PROJECT COORDINATOR Dr. Gregorian. and Dr. Daniel I.C. Wang, M.I.T., U.S.A

2.4	2.3		2.2	2.1	2A	P	TASK
Methods		•	Selection of Substrate Sy	Biological Value and Toxicity	ARRANGE WORK-	Exchange of Publications	NAME OF TASK OR SUB-TASK
of Decreasing	Single-Cell Protein For Food		of Microbe • Systems	lue	ARRANGE WORK-SHOP MEETINGS ON SIN	Gregorian	NAME OF PAR. AND COOPERATING U.S.S.R.
A.J. Sinskey, M.I.T. S.R. Tannenbaum, M.I.T.	S.R. Tanuenbaum, M 1 C.C. McDonald, DuPont C. Atkins, Std. Ind. C. Rha, M.I.T. M. Milner, UN (PAG) T. Labuza, Univ. Minn.	A. Laskin, Esso C. Wilke, U. Calif. J. Litchfield, Batt E. Field, Std. Ind. A. Humphrey, U. of G. Tsao, N.S.F.	D.I.C. Wang, M.I.T. C.L. Cooney, M.I.T. G. Dunlap, U. Missouri	V. Young, M.I.T. N. Scrimshaw, M.I.T. B. Oser, F & D Res. Lab. D. Calloway, U. Cal	ON SINGLE-CELL PROTEIN RESEARCH (PART A) TOTAL: 20 U.S. PART. AND 6 U.S.S DURATION: 3 DAYS	D.I.C. Wang M.I.T.	PARTICIPANTS TING INSTITUTIONS U.S.
.T. Fall, 1974 M.I.T.	1.1. Fall, 1974 ont d.	alif. Battelle Ind of Pa.	Fall, 1974 ouri	Fa11, 1974	E-CELL PROTEIN RESEARCH (PART A) TOTAL: 20 U.S. PART. AND 6 U.S.S.R. PART DURATION: 3 DAYS	July, 1974 and continuing	DATE AND DURATION OF TASK
Meet in U.S.A.	Meet in U.S.A.		Meet in U.S.A.	Meet in U.S.A.	A	Exchange of publications and Conference Reports	FORMS OF COOPERATION
=		•	.	Planning, Initiati and Reporting on Cooperative Progr		Establish and Continue Basis of Communication	EXPECTED RESULTS

PROJECT NO.

Toxicity and Biological Value of Such Products
PROJECT COORDINATOR Dr. Gregorian, U.S.S.R. and Dr. Daniel I.C. Wang, M.I.T., U.S.A.

2.4	2.3	2.2	2.1	2В	TASK
Methods for Decreasing	Single-Cell Protein for Food	Selection of Microbe- Substrate Systems	Biological Value and Toxicity	ARRANGE WORK-S	NAME OF TASK OR SUB-TASK
creasing	otein	ficrobe- :ems	.ue	SHOP MEETINGS ON SI	NAME OF PA AND COOPERATII U.S.S.R.
S.R. Tannenbaum, M.I.T.	C. Rha, M.I.T. M. Milner, UN (PAG)	D.I.C. Wang, M.I.T. E. Field, Std. Ind.	N.S. Scrimshaw, M.I.T.	ARRANGE WORK-SHOP MEETINGS ON SINGLE-CELL PROTEIN RESEARCH (PART 2) TOTAL: 20 U.S.S.R. PART & 6 U.S. PART DURATION: 3 DAYS	NAME OF PARTICIPANTS AND COOPERATING INSTITUTIONS U.S.S.R. U.S.
Fall, 1975	Fall, 1975	Fall, 1975	. Fall, 1975	H (PART 2) 6 U.S. PART	DATE AND DURATION OF TASK
Meet in U.S.S.R.	Meet in U.S.S.R.	Meet in U.S.S.R.	Meet in U.S.S.R.		FORMS OF COOPERATION
=	=	2	Planning, Initia- ting, and Report- ing on Cooperativ	•	EXPECTED RESULTS

Development of Technology for Industrial Production WORKING PROGRAM and Utilization of Food and Feed Proteins by Microbial Means, Including Research into Different Aspects of Toxi-

PROTECT TUTLE

PROJECT COORDINATOR Dr. Gregorian and Dr. Wang

	4.3	4.2	4.1	4	3. 2			ω		TASK
	Comparison of Basic Variables & Choice of Substrate	Cultivation on Methanol. Agricultura	Cultivation of Yeast on Molasses, Ethanol, Methanol, Hydrocarbons With Techno-Economic Analysis	RAW MATERIAL A	Regulation Amino Acid		Selection of Bacterial and Yeast Culture	CHOICE AND SELECTION OF		NAME OF TASK OR SUB-TASK
	Basic poice	of Bacteria , Ethanol,	f Yeast thanol, ocarbons, onomic	RAW MATERIAL AND ECCNOMIC ANALYSIS OF	and Control Content of SCP	•	1	LECTION OF MICROO	. WO	NAME OF I AND COOPERAT: U.S.S.R.
	M.I.T. U. of Pa. U. Missouri	G. Dunlap U. Missouri (Cellulosics)	D.I.C. Wang, M.I.T. (Hydrocarbons) C.L. Cooney, M.I.T. (Methanol) A.E. Humphrey U. of Pa. (Molasses)	YSIS OF SCP PRODUCTION	A.I. Demain, M.I.T. S.R. Tannenbaum, M.I.T.	M.I.T. Univ. of Wis. L.S.U.	R. Donovick, ATCC NRRL Cult. Coll. G. Silverman, U.S. Natick	MICROORGANISMS	WORKING PROGRAM OF SIX PROBLEM TOPICS	NAME OF PARTICIPANTS AND COOPERATING INSTITUTIONS U.S.S.R. U.S.
	One Week Fall, 1975	Two Years (197+-1976) U. of Missouri	Two Years Ex (1974-1976) Two Years (1974-1976) Two Years (1974-76) (U. of Pa.)	• .	Fall, 1974 1 Day and Continuing		Fall, 1974 and Continuing		EM TOPICS	DATE AND DURATION OF TASK
5 USSR Part.	Conference to Discuss Progress, Analsis of Results From 4.1 & 4.2 at M.I.T. USA- 5 USA Part.	Exchange of Reports	Exchange of Reports		Meet in U.S.A. Exchange of Exist- ing Research Re- sults		Microbial Culture Exchange	٠.		FORMS OF COOPERATION
	Conference to Dis- Establish Status cuss Progress, Analy- on Raw Material sis of Results From Best Suited With 4.1 & 4.2 at M.I.T. Optimistic Ecoust 4.2 at M.I.T. Optimistic Ecoustry USA- 5 USA Part.		Specify Economi- cally feasible substrates for SCP Production		Review Past Progress and Establish New Techniques		Establish and Broaden Existing Cultures	•		RESULTS

WORKING PROGRAM and Utilization of Food and Feed Proteins by Microbial

PROJECT TUTIE Toxicity and Biological V

PROJECT COORDINATOR Dr. Gregorian and Dr.

PROJECT NO.

:	6.3	6.2	6.1	6	5.2	5.1	.	TASK NUMBER
Capacity (Scale-up) For Biomass Purification and Production; Overall Process Evlauation; Economic Analysis	Purifying & Drying Rlaboration on Increased	Biomass Recovery	Fermentor Apparatus Design & Scale-up	DEVELOPMENT OF INDUSTRIAL METHODS	Development of Techniques For Reduction of Nucleic Acids By Enzymatic & Physico- Chemical Means	Development of Enzymatic & Mechani- cal Methods of Protein Release	DEVELOPMENT OF METHODS FOR PROTEIN ISOLATION	NAME OF NAME OF PARTIASK OR AND COOPERATING U.S.S.R.
T. Labuza, U. Minn.	T. Labuza, U. Minn. D.I.C. Wang, M.I.T.	D.I.C. Wang, M.I.T.	D.I.C. Wang, M.I.T.	S OF BIOMASS PRODUCTION	A.J. Sinskey, M.I.T. S.R. Tannenbaum, M.I.T.	D.I.C. Wang, M.I.T. (Release)	EIN ISOLATION FROM UNICEI	NAME OF PARTICIPANTS COOPERATING INSTITUTIONS .S.S.R. U.S.
Fall, 1977	Two Y_ars (1974-1976) 2 Months	Two Years (1974-1976)	Two Years (1974-1976)		Two Years (1974-1976)	Two Years (1974-1976)	FROM UNICELLULAR MICROORGANISMS	DATE AND DURATION OF TASK
Specific Processes 5 US Part.; 5 USSR Part. Meet in USSR	Exchange of Reports Work-shop with	Exchange of Reports	Exchange of Reports	•	Exchange of Research	Exchange of Research Report	SWSIN	FORMS OF COOPERATION
Economic Basis for Scale-up of Biomass Purification & Production	Establish & Process Establish Techno-	Define Process Parameters for Most Economical Means of Biomass Recovery	Establish Report on Fermentor Design Most Optimal for SCP Cultivation		Information Exchange and Establish Technical and Economic Feasibilities	Information Ex- change to Establish Technical and Economic Feasibili- ties		RESULTS

PROJECT COORDINATOR Dr. Gregorian, U.S.S.R. and Dr. Daniel I.C. Wang, M.I.T.

PROJECT NO.

Means Including Research into Different Aspects of Toxicity PRCJECT TITLEand Biological Value of Such Products WORKING PROGRAM Utilization of Food and Feed Proteins by Microbial

*	,	•	•	7	TASK NUMBER
		7.2	7.1		B
•	BIOLOGICAL VALUE AND TOXICITY	Protein Utilization in Preparation of Foods	Protein Isolation, Characterization of SCP	SPECIAL TREATM	NAME OF TASK OR SUB-TASK
A.A. Pokrovsky Nutrition Institute	JE AND TOXICITY	ion	off	SPECIAL TREATMENT OF BIOMASS AND ISOLATED PROTEIN THEREFROM FOR USE IN PREPARATION OF FOODS	NAME OF PARTICIPANTS AND COOPERATING INSTITUTIONS U.S.S.R. U.S.
N.S. Scrimshaw, te M.I.T.		T. Labuza, U. Minn.	C. Rha, M.I.T.	SOLATED PROTEIN THERE	INSTITUTIONS U.S.
Three Years (1974-1977)		Two Years (1975-1977)	Two Years (1975-1977)	FROM FOR USE IN P	DATE AND DURATION OF TASK
Exchange of Reports		Exchange of Research Reports	Exchange of Research Reports	REPARATION OF FOODS	FORMS OF COOPERATION
Establish Safety of SCP		Establish Protoco & Potential Route of Prepared Foods From SCP	Definition of Protein Isolation & Characterizatio of Isolated SCP		EXPECTED RESULTS

WORKING PROGRAM

Project No. 2

PROJECT TITLE: Technology Engineering Research and Development of Equipment and Methods for the Computerized Simulation, Design and Control of Processes for Microbial

PROJECT COORDINATORS: Dr. Shamil Yenikeyev, Kazan Institute Chemical Technology Dr. Arthur Humphrey, University of Pennsylvania

	TASK NUMBER	
	NAME OF TASK OR SUB-TASK	
	AND	
	NAME OF PARTICIPANTS COOPERATING INSTITUTI U.S.S.R. U.S.	
	NAME OF PARTICIPANTS COOPERATING INSTITUTIONS U.S.S.R. U.S.	
	DATE AND DURATION OF TASK	
e e e	FORMS OF COOPERATION	
	EXPECTED RESULTS	•

Development of techniques and new sensors for measuring the significant variables in microbial processes and assembling equipment for experimental investigations. Conference and position measurement of biomass mentation relative to Development of Instrumentation paper on needed instruinterface & software) (including computer Kazan Inst. Chem. Tech. Yenikeye**v** Penna. Penna. Univ. of Humphrey Univ. of Humphrey two years 1974-1976 summer 1974 one week exchange of 5 USSR part. 5 US part. of Penna. at Univ. conference research two man years reports ment equipment developmentation needed paper on instruposition

1.4

interface & software) dispersion (including measurement of system mentation relative to Development of Instruinterface & software) activity (including

measurement of microbial mentation relative to Development of Instruheterogeneous gas-liquidliquid fermentation

WORKING PROGRAM

Project No. 2

2.3	2.2	22.1	2	TASK	PRO	PRO
Development of experimental apparatus and taking of data for	Development of hydro- dynamical theory for heterogeneous gas- liquid-liquid microbial culture	Conference on mecha- nisms of hydrocarbon uptake by micro- organism	Investigation of momentum, heat, and mass transfer in heterogeneous gas-liquid-liquid type of culture condition	NAME OF TASK OR SUB-TASK	PROJECT COORDINATORS:	PROJECT TITLE:
experi- us and	hydro- y for ;a3- icrobial	ecna- arbon	mentum, he n	AND	Dr. Shamil Dr. Arthur	Engineerin Computeriz Technology
Yenikeyev Kazan Inst. Chem. Tech.		? Inst. Protein Synth. UCSR	at, and mass tran	NAME OF PARTICIPANTS D COOPERATING INSTITUTIONS U.S.S.R. U.S.	Dr. Shamil Yenikeyev, Kazan Institute Chemical Technology Dr. Arthur Humphrey, University of Pennsylvania	Engineering Research and Development of Equipment and Methods for the Computerized Simulation, Design and Control of Processes for Microbia Technology
	Erickson Kansas State Univ.	Erickson Kansas State Univ.	sfer in hetero		ın Institute Cl ersity of Penne	evelopment of esign and Cont
two years 1974-1976	two years 1974-1976	one week fall 1974	geneous gas-1:	DATE AND DURATION OF TASK	nemical Techno sylvania	Equipment and trol of Proces
exchange of research results	exchange of research reports	conference at Inst. Prot. Synth. Moscow, USSR 5 USSR part. 5 US part.	iquid-liquid t	FORMS OF COOPERATION	logy	pment and Methods for the of Processes for Microbial
equipment develop- ment	theory develop-	Report on status & theory of EC uptake by mi-	ype	EXPECTED RESULTS		:he)ial

ous system

microbes in a heterogen-Development of a kinetic theory for behavior of

State Univ. Kansas Erickson

> 1974-1976 two years

research

exchange

O.F

model

develop-

reports

ment

of data for creation of a model for microbial

Chem. Tech.

Kazan Inst.

Yenikeyev

two years 1974-1976

exchange

of f

of a

model for

control computer

appl.

reports research

population behavior in a

heterogeneous system

tal apparatus and taking

Development of experimen-

Conference to integrate results of tasks 1, 2 and 3 and to assist in the

Synthesis Yenikeyev

Inst. Prot.

one month

working

equipment

conf. on

1976 summer

equip. design

Chem. Tech Kazan Inst

State Univ. Kansas Erickson Penna. Univ. of Humphrey

demonstration unit (at design of the experimental

Inst. Protein Synth.

Research on microbial population dynamics of heterogeneous systems

WORKING PROGRAM

Project No. 2

enent and Methods for the Processes for Microbi L Technology La AND FORMS OF ON OF COOPERATION	TASK TASK OR SUB-TASK	PROJECT COORDINATORS:	PROJECT TITLE:
ods for the or Microbia. S OF EXATION RES	NAME OF PARTICIPANTS DATE AND AND COOPERATING INSTITUTIONS DURATION OF U.S.S.R. U.S. TASK	Dr. Shamil Yenikeyev, Kazan Institute Chemical Technology Dr. Arthur Humphrey, University of Pennsylvania	Engineering Research and Development of Equipment and Metho Computerized Simulation, Design and Control of Processes for Technology
TAPE SU	S OF EXPECTEI RESULTS		ods for the or Microbial

design & specifica-Approved For Release 2001/08/27: CIA-RDP79-00798A000400100011-1

creation

PROJECT COORDINATORS:	PROJECT TITLE:
PROJECT COORDINATORS: Dr. Shamil Yenikeyev, Kazan Institute Chemical Technology Dr. Arthur Humphrey, University of Pennsylvania	Engineering Research and Development of Equipment and Methods for the Computerized Simulation, Design and Control of Processes for Microbial Technology

TASK NUMBER	NAME OF TASK OR SUB-TASK Development of Engineerin	Dr. Arthur Humphrey, University of Pennsylvania NAME OF PARTICIPANTS AND COOPERATING INSTITUTIONS DURATION U.S.S.R. U.S. TASK Leering techniques for optimal design of industri	IPANTS STITUTIONS U.S. imal design of	Sylvania DATE AND FORMS OF DURATION OF COOPERATION TASK industrial scale fermentor	FORMS OF COOPERATION	EXPECTED
.	Development of Engineering techniques for optimal design of and automatic control of industrial fermentation processes	g techniques for opt industrial fermentat	imal design of ion processes	industrial sca	le fermentor	
4.1	Exchange visits in order to coordinate the plans for the computer coupled	Yenikeyev Kazan İnst. Chem. Tech.	Humphrey Univ. of Penna. Cooney-Mass.	two men (each side) exchange visits one	exchange visits	informa- tion exchange
· .	fermentation control systems		Inst. Tech. Jefferis Widener College	at post- doctoral level for one year, one at faculty level for three months		
4.2	Investigation on both the theoretical and practical aspects of	Yenikeyev Kazan İnst. Chem, Tech.	Cooney-Mass. Inst. Tech. Humphrey	1974-1976 e two men years o M.I.T. one a	exchange of results and exper-	knowledge in compu- ter contr
	computer control of fermentation systems	•		man year U. of P.	ience	systems plus soft ware deve

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WORKING PROGRAM

Project No.2

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	5.2	ίπ -	υ	4.3	TASK	· PI	PF
	Design and Construction of the computer controlled fermentation unit	Conference to coordinate total design information	Design and demonstration of practical system the production of single cell protein from	Investigation of both the theoretical and practical aspects of computer control of fermentation systems	NAME OF TASK OR AND SUB-TASK	PROJECT COORDINATORS:	PROJECT TITLE:
	? Inst. Protein Synth.	Yenikeyev- Kazan Inst. Chem.Tech. ? Inst.Protein Synth.	f practical system cell protein from	Yenikeyev- Kazan Inst. Chem.Tech.	NAME OF PAR. COOPERATING U.S.S.R.	Dr. Shamil Yeni Dr. Arthur Hump	Engineering Research the Computerized Sim Microbial Technology
	 	Humphrey- U. of P. Erickson- Kansas State Cooney-M.I.T. Jefferis- Widener Univ.	em for computer contro om hydrocarbon substra	Coony-M.I.T. Humphrey- U. of Penn.	IONS	Yenikeyev, Kazan Institute Humphrey, University of Pe	arch and Simulati logy
	one year 1976-1977	two weeks Fall 1976 U.	1 of tes	1974-1976 two men years M.I.T. one man year U. of P.	DATE AND DURATION OF TASK	Yenikeyev, Kazan Institute Chemical Humphrey, University of Pennsylvania	
in a second	Consultation on design and construction	conference with key people in attendance approx.5 from each side	fermentation system	exchange of results and experience	FORMS OF COOPERATION	cal Technology unia	Equipment and Methods Control of Processes
÷	optimally designed practical computer controlled fermentor	specification of final design & trial runs	tem for	knowledge in computer control systems plus software development	EXPECTED RESULTS		ods for es for
Арр		lease 2001/08/27	: CIA	-RDP79-0079	8A000400	100011-1	

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ved For	Release	2001/08/27	: CIA-F	RDP79-00798	3A0004001	00011-1	
6.3	ő. 2	6.1	6	W	TASK NUMBER	PROJ	PROJ
Editing and Publishing of Book	Writing of individual Chapters	Meetings to plan & outline joint book	JOINT WRITING AND PUBLISHING OF BOOK ON	Demonstration of optimal control of SCP fermentation through use of computer	NAME OF TASK OR SUB-TASK	PROJECT COORDINATORS:	PROJECT TITLE:
Yenikeyev- Humphrey - Kazan Inst.Chem. U. of P. Inst.	Yenikeyev- Humphrey- Kazan Inst.Chem. U. of P. Inst.	Yenikeyev- Humphrey- Kazan Inst.Chem. U. of P. Tech.	ISHING OF BOOK ON COMPUTER SIMULATION FERMENTA	? at appropriate site in USSR	NAME OF PARTICIPANTS AND COOPERATING INSTITUTIONS U.S.S.R. U.S.	Dr. Shamil Yenikeyev, Kazan Institu Dr. Arthur Humphrey, University of	Engineering Research and Development of the Computerized Simulation, Design and Microbial Technology
1976	1974-1976	Summer 1974 in connection with task 1.1	TI	Summer 1978	DATE AND DURATION OF TASK	Kazan Institute Chemical Technology Iniversity of Pennsylvania	
Editing book in both Russian and English	Exchange and criticism of Chapters	Planning of joint book	DESIGN & CONTROL OF ON SYSTEMS	Consultations	FORMS OF COOPERATION	ical Technology vania	of Equipment and Methods for and Control of Processes for
Jointly Published Book	Book manu- script	Book outline & chapter assignments		optimal SCP process	EXPECTED RESULTS		ods for es for

WORKING PROGRAM

Project No.2

PROJECT NO.

PROJECT TITLE Genetics of Industrial Microorganisms

PROJECT COORDINATORSDr. Halvorson and Dr. Brown, USA and Dr. S. Alikhanian, USSR

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Genetics of Andi		Conference to de		Development of go	MAME OF MASK OR SUB-MASK-
Andibiotic producing cultures gee 1.2	Mescow I. Tereshin Institute of Anti- biotics, Lemingrad S. Navachin institute of Anti- biotics, Moscow	to develop plans on the general fustitute of New Antibiotics,	E.I. Alikhanian That. genetics & selection of industrial microorganisms Moscow	genetic methods for improdevelop plans on genetics	NAME OF PARTICIPANTS AND COOPERATING INSTITUTI U.S.S.R. U.S.
00 00 00 00 00 00 00 00 00 00 00 00 00	ege.	genetics of antibiotic producion A. Demsin, MIT 2-3 day D. Perlesn, School of Fharmacy, U. of	H. Malvorson Brandeis U, Waltham, Mass.	ving indu of non a	SNO
3 years 1975 - 8	of	producing cultures 2-3 days 1975	rson 1-2 days 1975 Conference Design of the Co	croorganisms based o	DATE AND DURATION OF TASK
Exchange of results and pesonnel. 3 man years USSR 3 man years		Conference	Conference 5 USSR part. 5 USA part.	n approaches of	FORMS OF
Increased cro- per- duction of antibiotics	roved For Release 20	Design of CIA	Design of projects A-RDP79	molecular di d ogy. 40°)	EXPECT U D RESUL I S

USA

w

PROJECT TITES

PROJECT COORDINATORS Dr. Genetics of Industrial Microorganisms Halvorson and Dr. Brown, USA and Dr. S. Alikhanian,

USSR

0011 TASK TUMBER 1. (Continued) 1.5 1.7 1.6 1.4 Development of improved methods for cellulose utilization Genetics of non antibiotic producing cultures Use of genetic engineering and molecular biology for strain development Conference on genetic engineering SUB-TASK TASK OR MAHIE OF cular Biology, M.F. Shemyakin Institute of Moleorganisms, Moscow tics & Selection Moscow and Physiology of V.I. Tanyashin of Industrial Micro-Institute of Gene-V.N. Krylov Microorg., Moscow Inst. of Biochem-**MOSCOW** AND COOPERATING INSTITUTIONS Erokiid NAME OF PARTICIPANTS P. Berg Stanford Waltham, Mass P. Wensink Brandeis U., Waltham, Mass. Brandeis U., R. Schleif Natick, Mass M. Mandels ing 1975-6 2-3 years start-Stanford 2 years 1975-6 3 years 1976 3-4 days 1975-6 DURATION OF DATE AND TASK Conference Coordinated rean international conjunction with systems on selected model search projects meeting Specific research at Post Doc. level 2 man years USA 5 USSR in information projects 2 man years USSR strains Exchange of reports Exchange of COOPERATION FORMS OF Exchange of informate in & approaches RESULTS

Improve 98 A 000 4 00 10 00 15 tation Rech-Increas 20 of selective engineering genetic systems for microbial development Improve**c** research. Coordin**ating** nology zyme produc-tion and ferm EXPECTE

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 (Continued) 1.7 (Continued)

and Physiology of

M.I. Matvienko Inst. of Biochem.

Pouschino

Microorgan.,

NAME OF TASK OR SUB-TASK

NAME OF PARTICIPANTS
AND COOPERATING INSTITUTIONS

DATE AND DURATION OF TASK

FORMS OF COOPERATION

PROJECT COORDINATORS

PROJECT TITLE Dr. Halvorson and Dr. Brown, USA and Dr. S. Alikhanian, USSR Genetics of Industrial Microorganisms

PROJECT NO.

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EXPECTED. RESULTS

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FROJECT TILLE Genetics of Industrial Microorganisms

PROJECT COORDINATORS Dr. Halvorson and Dr. Brown, USA and Dr. S. Alikhanian,

DURATION OF DATE AMD TASK

Ahovian, Armenia

E. Afrikian

Inst. Microbiol

Mich. State

Gerhardt

3 days Oct. 1974

E. Lansing, Mich

COOPERATION FORMS OF

EXPECTED RESULTS

USSR

Planning of research project Planning of P Research property design 79 Exchange of 0 information? .000400100011-1

20 USA partici.

5 USSR Partici.

Mich.

VII. E. Lansing,

nection with spores Workshop in con-

i S Physiology and genetics of insect pathogens

Moscow

Genetic Lab.,

I. Domaradsky
Extrachromosome

of Nuclear Physics, Kostantinov Inst. I.A. Zakharov

beningrad

M.G. Oganesian Inst. of Genetics & Selection of Industrial Micro-USDA Peoria, Ill.

St. Julian

3 days 1975

Conference

Armenia

5 USA partici. 8 USSR partici

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organ., Armenia V.V. Sukhodolets Branch

Selection of In-Inst. Genetics & Madison

dustrial Micro-

U. of Wisc., R. Hansen

organ., Moscow

hysiology and genetics of Bacillus thuringieness and recillus popilliae

Inst. Microbio. Ahoyian, Armenia

Afrikian

L. Bulla

1 year 1975-6

or senior scien-Postdoctoral

production

Improved toxin

tist exchange

Research Center, Manhatan, Kansas

USDA Grain Marketing

Improved development of insect pathogens participants to be determined by 2.2

PROJECT NO.

PROJECT TITLE

Genetics of Industrial Microorganisms

PROJECT COORDINATORS_

Dr.

Halvorson and Dr.

Brown ,

USA and Dr. S. Alikhanian,

USSR

AND COOPERATING INSTITUTIONS U.S.S.R. NAME OF FARTICIPANTS U.S. DURATION OF DATE AND

NAME OF SUB-TASK

TASK

3 years 1976-9

Cooperative re-

search support

improvement

doctoral fellows Exchange of post-

COOPERATION FORMS OF

RESULTS

EXPROTED

Strain and yiel&

PROJECT TILLE

Genetics of Industrial Microorganisms

PROJECT NO.

PROJECT COORDINATORS Dr. Halvorson and Dr. Brown, USA and Dr. S. Alikhanian, USSR

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						ω	MOIS INCO
	ω		3.2		ω 1	Development methanol,	00011-1 DOMESTANCE DOMES
	Improved methods		Selection of hyd		Conference on mu	et et	MAITS OF TASK OR SUB-TASK
B.V. Simmon Dept. Genetics Leningrad U.	s for genetic analysis in yeasts	S.G. Inge-Vechtomov Dept. Genetics, Lenigrad U.	Selection of hydrocarbon utilization yeasts	S.G. Inge-Vechtomov Dept. Genetics, Leningrad U.	on mutagenesis and recombination in yeasts	genetic methods to improve industrial	NAME OF PARTICIPANTS AND COOPERATING INSTITUTIONS U.S.S.R. U.S.
Halverson Brandeis U., Waltham, Mass.	n yeasts	R. Mortimer U. of Calif. Berkeley	asts	R. Mortimer U. Calif., Berkeley	tion in yeasts	strains	ANTS TUTIONS U.S.
3 years 1975-8		3 years 1975-8		4-5, days 1975		of yeasts, including	DATE AND DURATION OF TASK
Research support Postdoctoral exchange		Research support postdoctoral exchange	•	Conference Leningrad Theory of mutagenements as applied as applied strain section 4		including utilization of hydrocarbons,	FORMS OF COOPERATION
Improved theory and methods or meiosis and esporulation or sporulation or sporula	Relea	Improved preduction of hydro- carbon utilizing yeasts s	27 : C	grad Theory of mutagenesis as applied to strain spling to lection A	98 <u>A</u> (irocarbons,	EXPECTING OF THE PROPERTY OF T
•		U-9 -	. 4	<u> </u>			· · · · · · · · · · · · · · · · · · ·

PROJECT TITLE Genetics of Industrial Microorganisms

PROJECT COORDINATORS Dr. Halvorson and Dr. Brown, USA and Dr. S. Alikhanian,

Appr	roved	For Release 2001/08/27	: CIA-RDP79-00798A	0004001	00011-1
	4.3	, t	٠.	ന	00011-1 TASK
	Symposium on Genetic Methods	Development of viruses V.V. Inst Sele orga M.G. Inst Sele orga orga		Development of methods 4.1 Construction of ge	NAME OF TASK OR SUB-TASK
Summary of projects 1-4	etic Methods	Sukhodolets Genetics & ct. of Micro n., Moscow Oganesian Genetics & ct. of Micro Armenia	M.G. Oganesian Inst. of Genetics & Selection of Ind. Microorgan., Armenia Branch N.T. Zhdanova same, Moscow	lopment of methods of genetic analysis of microorganisms f Construction of genetic strains for amino acid production	NAME OF PARTICIPANTS AND COOPERATING INSTITUTIONS U.S.S.R. U.S.
-1-		genetic analysis in Bacillus H. O. Halvorson Brandeis U. Waltham, Mass. F. Young Rochester Medical Cchool, Fochester, N.Y.	J. Shapiro U. of Chicago. Chicago, Ill.	S.	ANTS TUTIONS U.S.
1 week 1979		3 years 1974-5	3 years 1974-77	the production of amino acids	DATE AND DURATION OF TASK
Final reports projects		Joint research projects. Exchange of personnel	Cooperative research support Postdoctoral exchange		FORMS OF COOPERATION
Publish book on conference	roved	Improved gg/08/27 system 2009etic	Improved spain developmen of the cia-RDP of the cia-RDP cia-RD	0004001	EXPECTED RESULTED

PROJECT TITLE Enzyme Applications

PROJECT COORDINATOR G.T. Tsao (U.S.A.)

PROJECT NO.

Appro		For R	elea 2.2	se 200	01/08/2 Com 2.1	27 : Cl <i>i</i>	A-RDP79-0079	98A000400	0100011-1 TASK TA
Equipment de		Stabilizatio	Process deve	ro	Commercial isolation 2.1 Enzyme isolation		2 Microbial Phy	Search and isolation of tissue cultures 1.1 Strain selction	TASK OR L
sign same		n of enzymes	opment	same	ion and purification of	same	Inst. for Protein Syn. Inst. for Chem. of Natural Prod. Tollin Poly. Inst. Physiology	tion of enzyme producing es ion	AND COOPERATING U.S.S.R.
same	same	same		same	tion of enzymes	same	i Sy	ខ្ល	INSTITUTIONS
5 yrs.	5 yrs.	5 yrs.	•	5 yrs.		5 yrs.	s 5 yrs•	micro	DURATION OF FORMS OF TASK COOPERATION
joint projects	joint projects	<pre>joint research projects</pre>		joint research projects		joint research projects	exchange and testing to compare strains	•	FORMS OF COOPERATION
production	equipment	For R	elea	se 200	01/08/2	more profits	more strai		EXPECTED 0011-1

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and

PROJECT TITLE Enzyme Applications

PROJECT NO. 4

Approved For Release 20	01/08/27 : C	CIA-RDP79)-00798 <i>i</i>	A00040	0100011	-1
	,	4			Li	TASK
	4.2 Enzyme detection of Moscow Berrain	Diagnostic and Ana 4.1 Enzyme-immune	3.3 Multienzyme and/or same	3.2 Carrier se	Immobilized Enzymes 3.1 Theoretical analysis Moscow U	NAME OF TASK OR SUB-TASK
	faint Univ.	and Analytical Uses of immune essay	we and/or cofactor systems same	selection several institutions	and niv.	NAME OF PARTICIPANTS AND COOPERATING INSTITUTIONS U.S.S.R. U.S.
	light or sound Univ. of Penn. Graves Others	f Immobilized Enzymes NSF Grantees	systems same	ions same	modelling N.S.F. Grantees	NATOR
	5 yrs.	5 yrs.	5 yrs.	5 yrs.	5 yrs.	G.T. Tsao, I. Berezi DATE AND DURATION OF TASK
	joint projects $\bigg \}$	joint projects	joint projects	joint projects	joint projects)	Berezin & K.A. Kalunyante F FORMS OF COOPERATION
Approved For Release 20		new Side	processes 9	understandic	developmento	EXPECTED RESULTS

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NAME OF TASK OR

SUB-TASK

NAME OF PARTICIPANTS

AND COOPERATING INSTITUTIONS

TASK DURATION OF DATE AND

FORMS OF COOPERATION

EXPECTED

PROJECT COORDINATOR G.T. Tsao, I. Berezin & K.A. Kalunyante PROJECT TITLE Enzyme Applications

PROJECT NO.

Technology of Enzymatic Cleavages 5.1 Production of sugar from cellulose 5.2 Fermentable sugars from agricultural wastes 5.3 Enzyme production of milk substitutes same L.S. Losyakova of Protein Sub. L.S. Losyakova Inst. of Biosyn.

Burnet and Lee

5

yrs.

joint project

U. Cal. Berkeley Wilke and Bassham

5 yrs.

joint project

5.4 Cleavage reversal to make peptides and fine chemicals

Participation in Polymery 74 Conference

Symposium on Production and Properties of Immobilized Enzymes

Tsao

Berrezin

Weetal

Corning Glass

5 yrs.

joint project

yrs.

S

joint project

RESULTS 1.1

RESUL

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PROJECT NO.

INCJECT TITLE Microbiolgoical Control of Pests of Agricultural Crops

PROJECT COORDINATORS Dr. A. Heimpel, USDA, USA and Dr. Olga A. Alioshina

Approved:For	Releasse ∓	2001/08/ <mark>27</mark>	: CIA-RD P79 N	-00798A 0 00	
Final meeting to prepare report	Second work planning meeting on problems	Research on survey & basic	Working planning meetings on problems 2 & 3	Exchange of publication & bacterial cultures	NAME OF NAME OF SK TASK OR AND COOPERATE SUB-TASK U.S.S.R Sporulation of Milky Disease Bacteria
=	=	. 11		N. Acad. Armenian, USSR, Kiev, Mos- cow	PARTICII ING INSTI
All previous participants (4 days)	=	3	" + other parti- cipants (3 days)	Cornell Exp. St. Geneva, N.Y. ARS, Beltsville, Md.	ANTS TUTIONS
Early Spring 1978	Spring 1977	January 1975 –1 976	Iate Fall 1974	Start 7/74 continual exchange	DATE AND DURATION OF TASK
Meeting in US	Meeting in USSR 8-10 US 8-10 USSR	Cooperative Re- search, Correspond- ence	Meeting in US 6-7 US 6-7 USSR	Exchange of cultures and literature	FORMS OF COOPERATION
Prepare fina report ed Approve	Plan futuse program lea	Partial sports in the possibility success in the method 20	Plan coop P79 tive program CI	Established virulent A strains for further work	EXPECTIFIED RESULTED A001000 1000 1000 1000 1000 1000 1000

ROJECT TITLE Microbiological Control of Pests of Agricultural Crops

A. Heimpel, USDA, USA and Dr. Olga A. Alioshina

EXPECTION

RESULTES

Prepare cooperation 798&

PROJECT NO.

S

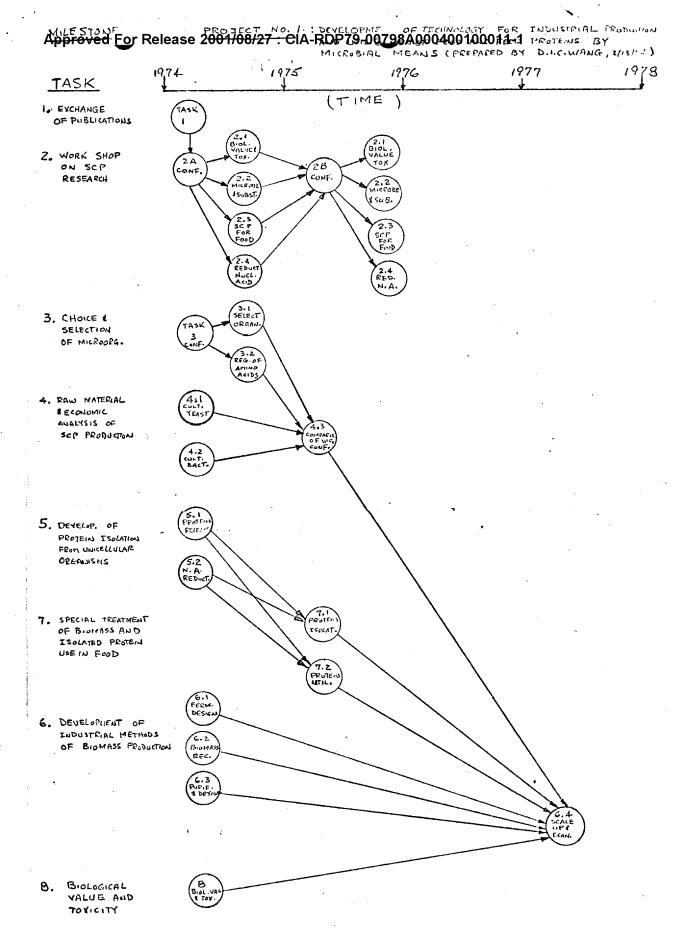
PROJECT COORDINATORS Dr.

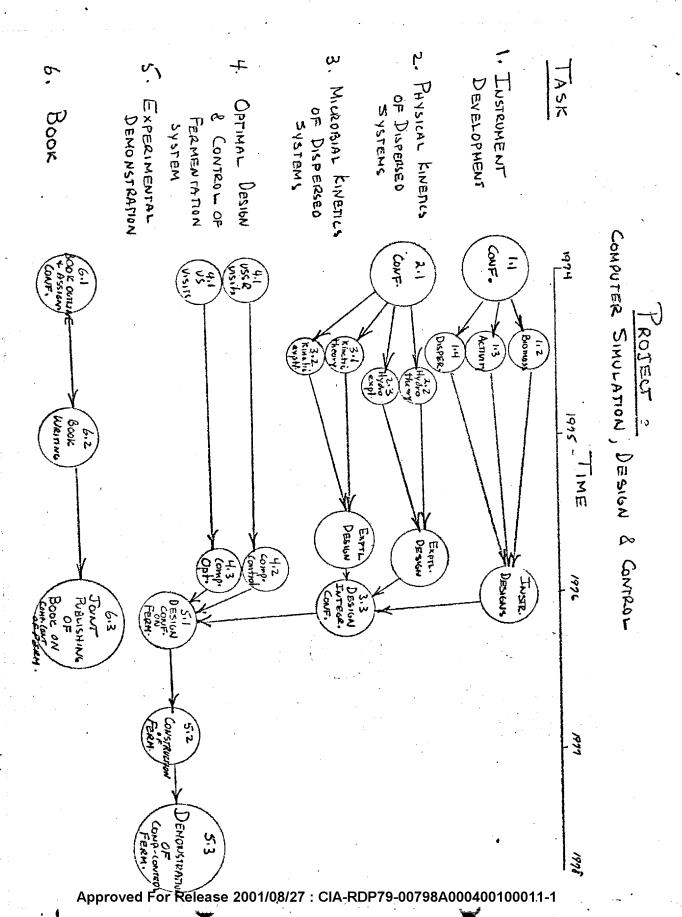
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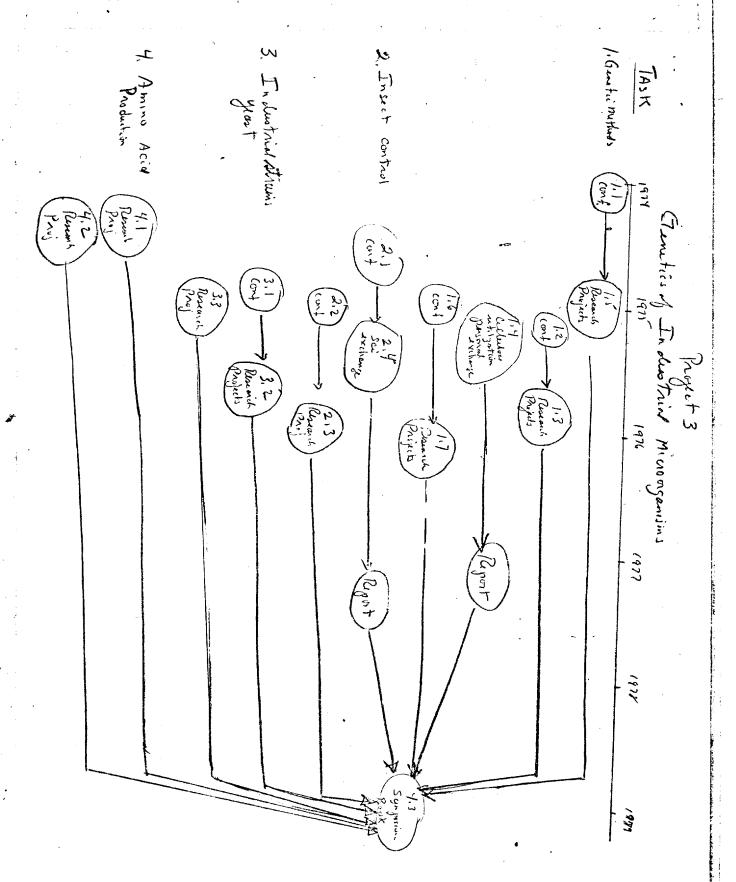
Plan of erative

Final repse 200
For Release

Method for virus prosonated auction at the contraction at the contract







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Project 1

TOTAL BUDGET ESTIMATE FIVE YEARS WITH PRIORITY

Development of Technology for Industrial Production and Utilization of Food and Feed Proteins by Microbial Means, Including Research Into Different Aspects of Toxicity and Biological Value

Task	Type of Task	Starting Date Duration	First	Second	Third
Number		of Task	Priority	Priority	Priority
			Estimated	Estimated	Estimated
		•	Budget	Budget	Budget
_			(\$)	(\$)	(\$)
1	Clerical	July, 1974 5 Years	\$500	\$2000	\$2000
2A	Conference	July, 1974 3 Days	\$5000	\$9000	\$9000
2B	Conference	Sept., 1974 3 Days		\$9000	\$9000
3.2	Conference	Sept., 1974 1 Day	\$1000	\$1000	\$1000
4.1	Res. & Dev.	July, 1974 2 to 3 Years	\$50,000	\$110,000	\$250,000
4.2	Res. & Dev.	July, 1974 2 to 3 Years	\$50,000	\$110,000	\$250,000
4.3	Conference	Sept., 1975 1 Week		\$2000	\$2000
5.1	Res. & Dev.	July, 1974 2 to 3 Years	\$30,000	\$80,000	\$160,000
5.2	Res. & Dev.	July, 1974 2 to 3 Years	\$30,000	\$80,000	\$120,000
6.1	Res. & Dev.	July, 1974 2 to 4 Years	\$50,000	\$100,000	\$250,000
6.2	Res. & Dev.	July, 1974 2 to 3 Years		\$80,000	\$100,000
6.3	Res. & Dev.	uly, 1974 2 to 3 Years		\$100,000	\$200,000
6.4	Workshop	Sept., 1974 2 Months		\$20,000	\$35,000
7.1	Res. & Dev.	July, 1975 2 to 3 Years		\$80,000	\$80,000
7.2	Res. & Dev.	July, 1975 2 to 3 Years	-	\$80,000	\$80,000
8 ***	Res. & Dev.	July, 1974 3 to 5 Years	\$40,000	\$150,000	\$450,000

TOTAL FOR FIVE YEARS

\$256,500 \$1,013,000 \$1,998,000 (1st Priority) (2nd Priority) (3rd Priority)

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BUDGET TIMING OVER FIVE YEARS

Project No. 1

FIRST PRIORITY

sk No.	lst Year	2nd Year	3rd Year	4th Year	5th Year	Subtotal for 5 Years
	Å500	0	0	0	0	\$500
1	\$500 \$5000	0	0	0	0	\$5000
2A • 2B	\$3000 0	. 0	0	0	0	0
3.2	1000	-	_	<u>-</u>	_	\$1000
4.1	25,000	25,000			. · · · · · · · · · · · · · · · · · · ·	50,000
4.2	25,000	25,000	-	-	· •	50,000
5.1	20,000	10,000	<u>.</u> .	-	-	30,000
5.2	20,000	10,000	: 	.	-	30,000
6.1	30,000	20,000	_	_	. •	50,000
6.2	* _	_	_	_	_	0
6.3		-	. - .	_	• • • • • • • • • • • • • • • • • • •	0
6.4	•	-w. ₩	_	· _	_	0
7.1	- .		· —	· 	-	0
7.2	-	_	-	••• .		, o
8	20,000	20,000	-	_	. -	40,000
Total	\$146,500	\$110,000	0	0	0	\$256, 500

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BUDGET TIMING OVER FIVE YEARS Project No. 1

SECOND PRIORITY

lask No.	1st Year	2nd Year	3rd Year	4th Year	5th Year	Subtotal for 5 Years
1	\$1000	\$500	\$500	-	-	\$2000
2A *	\$9000	_	<u>.</u>	- .	-	\$90 00
2B	· -	\$9000	-	-	-	\$9000
3.2	\$1000	<u>-</u>	-	J -	-	\$1000
4.1	\$55,000	\$55,000	-	-		\$110,000
4.2	\$55,000	\$55,000	-	-	-	\$110,000
4.3	<u> </u>	\$2000	-		-	\$2000
5.1	\$35,000	\$45,000	_	_	-	\$80,000
5.2	\$30,000	\$50,000	_	•	-	\$80,000
6.1	\$45,000	\$55,000	-	-		\$100,0 00
6.2	\$40,000	\$40,000	_	-	·	\$80,000
6.3	\$45,000	\$55,000	_		-	\$100, 000
6.4	- · · -	_	\$20,000	-	· -	\$20, 000
7.1	-	\$40,000	\$40,000	_		\$80,000
7.2		\$40,000	\$40,000	-	-	\$80,000
8	\$50,000	\$50,000	\$50,000	_	- ,	\$150,000
÷/*						
Total	\$366,000	\$496,500	\$155, 500	_		\$1,013, 000

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BUDGET TIMING OVER FIVE YEARS Project No. 1

THIRD PRIORITY

sk No.	1st Year	2nd Year	3rd Year	4th Year	5th Year	Subtotal for 5 Years
	\$1000	\$500	\$500		7.	\$2000
1	\$9000	_	· 			\$9000
2A		\$9000	-	· -	-	\$9000
2B	\$1000	-	_	_	-	\$1000
3.2	\$1000 \$100,000	\$100,000	\$50,000	_	-	\$250,000
4.1	\$100,000 \$100,000	\$100,000	\$50,000	_	-	\$250,000
4.2	\$100,000	\$2000	_	_	_	\$2000
4.3	^ \$60,000	\$70,000	\$30,000	-	_	\$160,000
5.1	\$40,000	\$50,000	\$30,000	_	_	\$120,000
5.2	\$ 40,000	\$60,000	\$150,000	-	-	\$250,000
6.1		\$50,000	\$10,000	_	•••	\$100,000
6.2	\$40,000	\$80,000	\$40,000	_	-	\$200,000
6.3	\$80,000	_	\$35,000	-		\$35,000
6.4	-	\$40,000	\$40,000		-	\$80,000
7.1	_	\$40,000	\$40,000	· .		\$80,000
7.2 8	\$ 50,0 00	\$70,000	\$110,000	\$110,000	\$120,000	\$450,000
Total	\$531,000	\$671,500	\$565,500	\$110,000	\$120,000	\$1,998,000

Approved For Release 2001/08/27: CIA-RDP79-00798A000400100011-1 FIVE YEAR PLANNING FOR PROJECT NO. 2

"Engineering Research and Development of Equipment and Methods for the Computerized Simulation, Design and Control of Processes for Microbial Technology"

> Project Coordinators: Dr. Shamil Yenikeyev Dr. Arthur E. Humphrey

Task No.	Type of Task St	arting Date	Duration		2nd Priorit	<u>3rd</u> yPriority
1.1 1.2 1.3 1.4	Conference Research Research Research	July 1974 July 1974 July 1974 July 1974	1 week 2 yrs. 2 yrs. 2 yrs.	10,000 130,000 USSR		
2.1 2.2 2.3	Conference Research Research	Sept. 1974 Jan. 1974 Jan. 1974	1 week 2 yrs. 2 yrs.	5,000 USSR	65,000	·
3.1 3.2 3.3	. Research Research Conference	Jan. 1974 Jan. 1974 July 1976	2 yrs. 2 yrs. 1 mo.	USSR 10,000	65,000	
4.1	2 Exchange Visits	1975-1976	1 yr.		24,000	
4.2 4.3	Research Research	July 1974 July 1974	2 yrs. 2 yrs.	180,000	180,000	180,000 180,000
5.1 5.2	Conference Research (consultation)	Fall 1976 July 1976	2 weeks 1 yr.	10,000 USSR	5,000	
5.3	Consultation	Summer 1977	3 mos.	USSR	10,000	
6.1 6.2	Conference &	Fall 1974	2 weeks	· .	~ ·	10,000
6.3	Consultation Consultation & Publishing	Fall 1974 Summer 1976	2 yrs. 3 mos.			50,000 10,000
				345,000.	349,000.	430,000.
		CUMULATIVE T	OTALS	345,000.	694,000.	1,124,000.

A - Low Budget Approved For Release 2001/08/27: CIA-RDP79-00798A0004g0100911s1t Budget C - Full Budget

VENT	EVENT NAME	ESTIMATED COST ¹	PRIORITIES HOH	PRIORITIES WB
1	3rd Meeting Working Group			
2	Conference	\$7,000	A	
3	Conference	\$6,000 ·	Α	
4	Research Projects	\$75,000-\$150,000	B Lower C Higher	} year Als Beneau
5	Research Projects	\$40,000	В	
6	Annual Conference	\$15,000	С	
7	Research Projects	\$75,000-\$150,000	A Lower C Higher	
8	Exchange Personnel	\$75,000	В	
9 ,	Conference	\$7, 000	В	
10 .	Research Projects	\$75,000-\$150,000	B Lower C Higher	
1.1	Workshop	\$7,000	Α	
12	Conference	\$5,000	В	
1.3	Research Projects	\$75,000-\$150,000	B Lower C Higher	
14	Research Projects	\$20,000	С	
15	Conference	\$5,000	С	
16	Conference	\$5,000	В	
17	Research Projects	\$25,000-\$50,000	B. high	makan:
18	Research Projects	\$50,000-\$100,000	A Lower C Higher	~
19	Exchange Personnel	\$40,000	В	
20	Conference	\$4,000	C	
21	Research Projects	\$25,000-\$50,000	A Lower B Higher	
22	Research Projects	\$50,000-\$100,000	A Lower C Higher	
23	Exchange Personnel	\$40,000	. В	
24		\$4,000 elease 2001/08/27 : CIA-RDP		00011-1
25	Symposium	\$30,000	. A	

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Squibb & Sons, Inc.

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Box 4000 eton, New Jersey 08540 Cable: ERSQUIBB NYK

February 26, 1974

Dr. J. M. Leise Senior Staff Associate to the Deputy Assistant Director for Research National Science Foundation Washington, D.C. 20550

Dear Josh:

I have reviewed the priorities set by Harlyn Halvorson on the various events under Project 3 and am in complete accord with the ratings that he has established with one exception. Under event 4, I recommend we set 3 levels of operation for the three possible budgets: A - \$30,000, B - \$75,000, and C-\$150,000. I trust that you will notify us at an early date at what budgetary level we can expect to proceed.

With best wishes,

Sincerely yours,

William E. Brown

cc: Professor H. O. Halvorson

Dean A. E. Humphrey

fioject +, rask 5) Fermentable sugar \$80,000	. 1975	1976	1977	1978
.2	100,00	120,000	140,000	160,000
Sugar from cellulose \$80,000 U. Cal. Berkeley Project 4, Task 5.1	100,000	120,000	140,000	160,000
Acoustic Imaging \$60,000 Project 4, Task 4.2	80,000	100,000	120,000	140,000
First Priority Group \$230,000	280K	340K	400K	460K
Cleavage Reversal \$90,000 Corning Glass Project 4, Task 5.4	100K	110K	120K	130K
) Project 4, Task 5.3	80K	100K	120K	140K

U.S.-U.S.S.R. Joint Commission on Scientific and Technical Cooperation

U.S. WORKING GROUP ON MICROBIOLOGY

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202-632/5989

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215-594/7084

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Dr. Henry Bungay Vice President for Research and Development The Worthington Chemical Company Freehold, New Jersey 07728

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Dr. Edmund Field Consultant American Oil Company 5719 South Kenwood Avenue Chicago, Illinois 60637 - 2 -

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Beltsville, Maryland 20704

Dr. George Tsao
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Washington, D.C. 20550

Dr. Daniel I. C. Wang Department of Nutrition and Food Science Massachusetts Institute of Technology Cambridge, Massachusetts 02139

3/15/74

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U.S. WORKING GROUP ON MICROBIOLOGY

U.S. Project Coordinators

Chairman

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Office of the Deputy Assistant
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1800 G Street, N.W.
Washington, D.C. 20550

202-632/5989

RCA TELEX: 24521 NASCF UR Western Union: 89-2438 NATSCIFOUN

Project Coordinators

1. Development of Technology for Industrial Production of Food and Feed Proteins by Microbial Means

> Dr. Daniel I. C. Wang Department of Nutrition and Food Science Massachusetts Institute of Technology Cambridge, Massachusetts 02139

617-253/2126

2. Engineering Research and Development of Instrumentation and Methods for the Computerized Simulation, Design and Control of Processes for Microbial Technology

Dr. Arthur E. Humphrey
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Philadelphia, Pennsylvania 19174

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Where available, telex or TWX service identified; otherwise only office telephone numbers listed 7: CIA-RDP79-00798A000400100011-1

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- 2 -

3. Molecular Biology of Industrial Microorganisms

Dr. Harlyn O. Halvorson Professor of Molecular Biology Brandeis University Waltham, Massachusetts 02154 617-647/2431

4. Development of Methods of Producing and Using Enzymes and Other Biologically Active Substances for Agriculture

Dr. George Tsao
Program Director
Division of Advanced
Technology Applications
National Science Foundation
Washington, D.C. 20550

202-632/0648

RCA TELEX: 24521
NASCF UR
Western Union:
89-2438 NATSCIFOUN

5. Microbiological Control of Pests of Agricultural Crops

Dr. Arthur N. Heimpel Plant Protection Institute Bio-Science Building, Room 214 U.S. Department of Agriculture Beltsville, Maryland 20704

301-344/2380

3/25/74

U.S.-U.S.S.R. Joint Commission on Scientific and Technical Cooperation

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